

Frontend Development with React.js

# InsightStream: Navigate the News

## Introduction

**Project Title: InsightStream:Navigation the News**

### Team Members:

- Sathish V– Team Leader
- Sivamani M – Team Member
- Natarajan D – Team Member
- Yugan S – Team Member

## Project Overview

### Purpose

InsightStream is an innovative **web-based news application** designed to revolutionize the way users access, explore, and consume news. By leveraging **cutting-edge technologies** and an intuitive user interface, it provides a seamless and highly interactive experience.

Unlike traditional news platforms, InsightStream goes beyond static articles by offering **dynamic search features, categorized news exploration, and personalized content**.

Whether users are casual readers, journalists, or researchers, the platform ensures **quick access to the latest updates from credible sources** through **real-time API integrations**.

### Features

**News from API Sources:** Fetches news articles from external APIs using Rapid API integration.

**Visual News Exploration:** Presents news with images and categorized sections for easy navigation.

**Advanced Search Feature:** Enables users to find news articles based on keywords and specific topics.

**User-Friendly Design:** Provides an intuitive UI for smooth browsing and interaction.

**Subscription Feature:** Users can subscribe to receive daily news updates.

**Dark Mode:** Allows users to switch between light and dark themes for better readability.

**Commenting System:** Users can engage in discussions on news articles.

**User Authentication:** Enables personalized news feeds and saved articles.

## Architecture

### Component Structure

**Pages Folder:** Stores files for different routes, such as Home, Categories, Search Results, and Article Pages.

**Components Folder:** Contains reusable components like Navbar, Hero Section, News Cards, Search Bar, and Footer.

**Context Folder:** Handles global state management using Context API.

**Styles Folder:** Contains CSS files for styling the application.

**Assets Folder:** Stores images, icons, and static resources.

### State Management

**Global State:** Managed using Context API to ensure efficient data sharing across components.

**Local State:** Managed using React's `useState` and `useEffect` hooks to optimize rendering.

### Routing

Uses **React Router Dom** to navigate between different pages seamlessly.

## Setup Instructions

### Prerequisites

To run the InsightStream application, install the following:

**Node.js & npm:** [Download here](#)

Git: [Download here](#)

Code Editor (Recommended: Visual Studio Code): [Download here](#)

## Installation Steps

1. **Clone the repository:**

```
git clone [repository link]
```

2. **Navigate to the project directory:**

```
cd news-app-react
```

3. **Install dependencies:**

```
npm install
```

4. **Run the application:**

```
npm start
```

Open a browser and visit [https://github.com/sathish-smart/News\\_app.git](https://github.com/sathish-smart/News_app.git)

## Component Documentation

### Key Components

**Navbar:** Provides easy navigation across the application.

**Hero Section:** Displays trending news and a search bar.

**Category Cards:** Highlights different news categories for quick access.

**News List:** Fetches and displays relevant news articles dynamically.

**Article Page:** Presents full news articles fetched from the API.

**Subscription Section:** Allows users to subscribe to daily updates.

### Reusable Components

### Reusable Components

1. **Button**

- o A standard button component for interactive elements.
- o Used across different pages for actions like **"Read More," "Subscribe," and "Search."**
- o Supports different styles and sizes.

 *Stored in: /components/Button.js*

 *Image Reference: /folder\_name/button.png*

## 2. SearchBar

- o Provides search functionality to find articles quickly.
- o Allows users to enter keywords and fetch relevant news.
- o Works in sync with **News List and Category Pages**.

 *Stored in: /components/SearchBar.js*

 *Image Reference: /folder\_name/search\_bar.png*

## 3. NewsCard

- o Displays individual news articles in a structured format.
- o Includes **title, thumbnail image, summary, and a "Read More" button**.
- o Enhances user experience with an interactive layout.

 *Stored in: /components/NewsCard.js*

 *Image Reference: /folder\_name/news\_card.png*

# Styling

## CSS Frameworks and Libraries

**Tailwind CSS:** For modern and responsive styling. [Learn more](#)

**React Icons:** Provides a collection of UI icons.

# Testing Strategy

## Unit Testing

Uses **Jest** and **React Testing Library** to validate individual components and functionalities.

## Integration Testing

Tests API calls and UI interactions to ensure smooth user experience.

## Project Execution Plan

### Milestone 1: Project Setup

Install necessary tools and dependencies.  
Set up the project structure and routing paths.

### Milestone 2: Development

Develop **Navbar** and **Hero** components.  
Fetch and display trending news.  
Implement category-based news navigation.  
Add the subscription section and footer.  
Build the category page to filter news articles.

## API Integration

### Fetching Trending News

```
const fetchTopNews = async () => {
  try {
    const response = await
    axios.get('https://newsapi.org/v2/everything?q=popular&apiKey=YOUR_API_KEY');
    return response.data.articles;
  } catch (error) {
    console.error('Error fetching news:', error);
  }
};
```

### Fetching News by Category

```
const fetchCategoryNews = async (category) => {
  try {
    const response = await
    axios.get(`https://newsapi.org/v2/top-headlines?category=${category}&apiKey=YOUR_API_KEY`);
    return response.data.articles;
  } catch (error) {
    console.error('Error fetching news:', error);
  }
}
```

};

## Future Enhancements

**User Authentication:** Enabling personalized news feeds.

**AI-based News Summarization:** Automatically generating summaries for lengthy articles.

**Enhanced User Interactions:** Implementing features like likes, comments, and social sharing.

**Offline Mode:** Allowing users to save articles for offline reading.

## Known Issues

**API Rate Limits:** Some articles may be unavailable due to API restrictions.

**Image Loading Issues:** Certain news sources may not provide images.

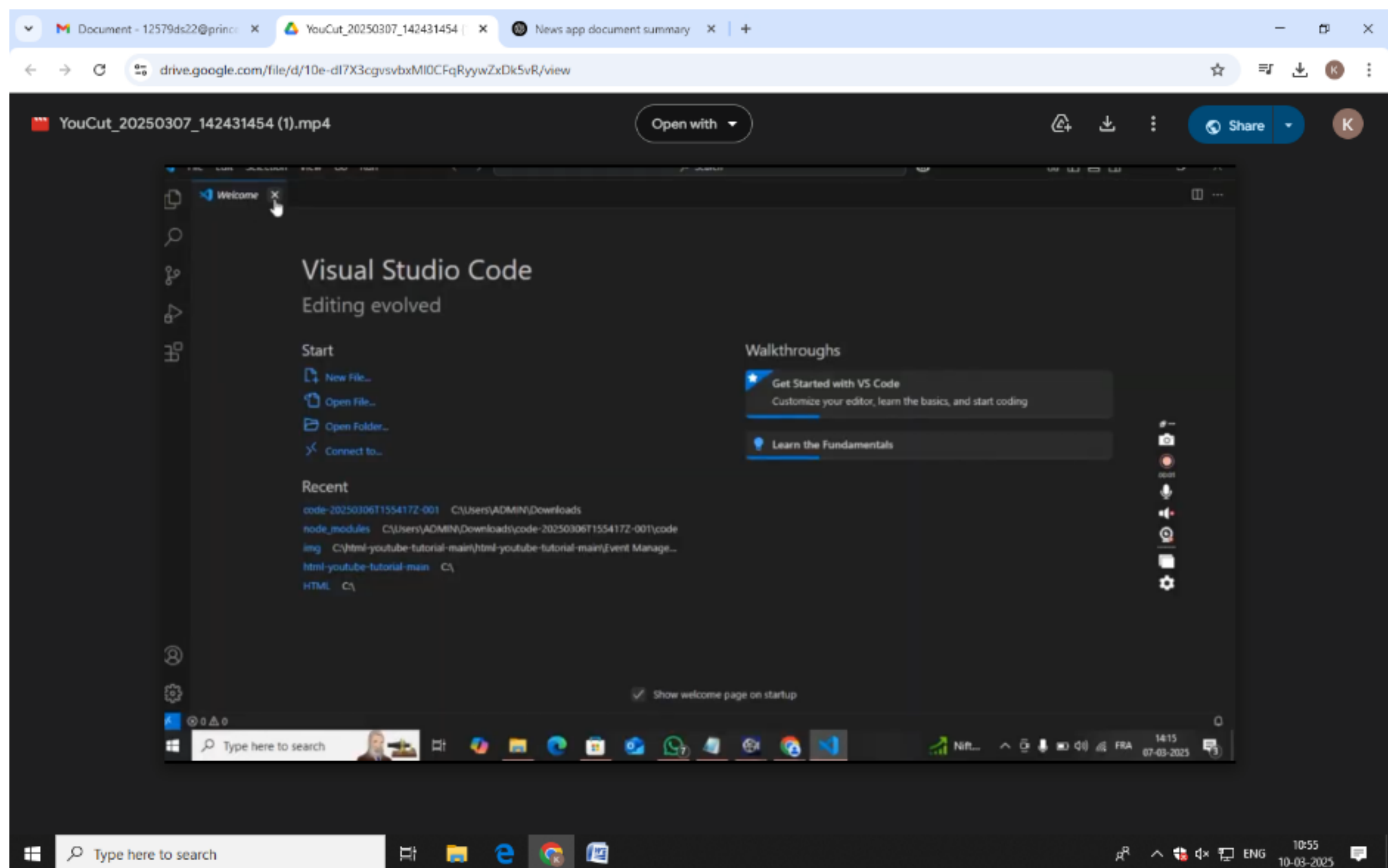
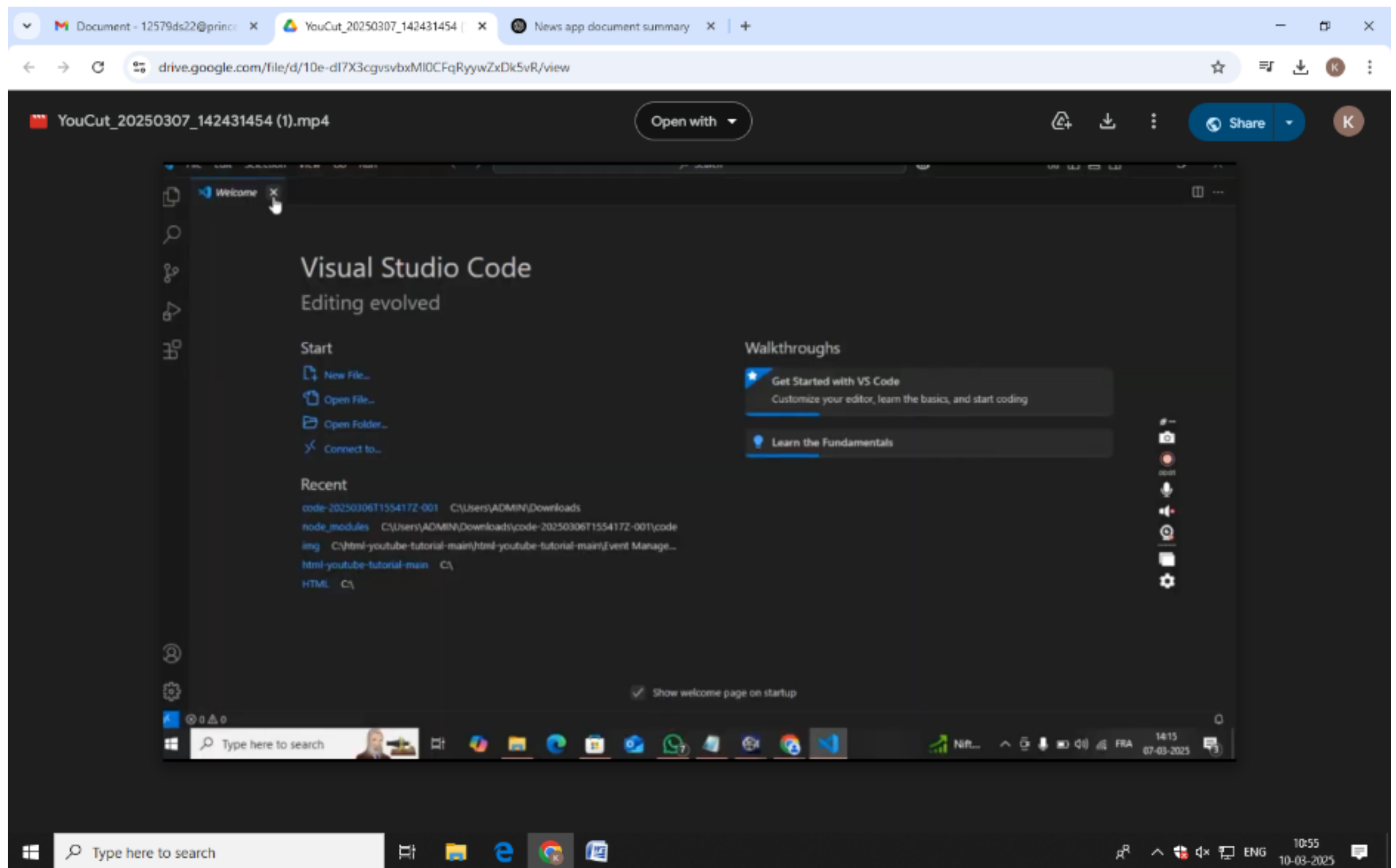
## Project Demo

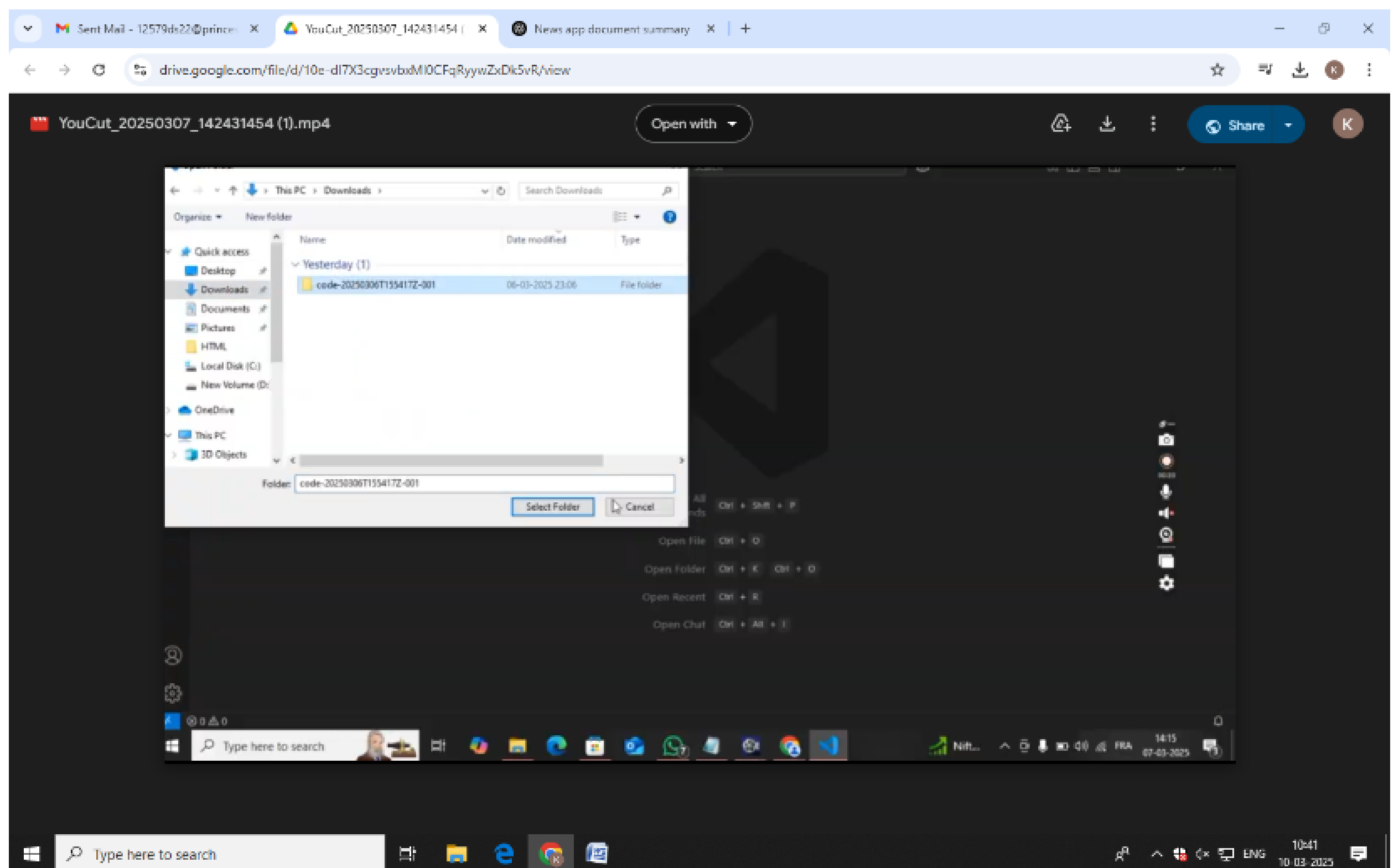
Watch the project demo here:

[https://drive.google.com/file/d/18QrlrD-e87iQua65NRsdEwshL9q\\_hs29/view?usp=sharing](https://drive.google.com/file/d/18QrlrD-e87iQua65NRsdEwshL9q_hs29/view?usp=sharing)

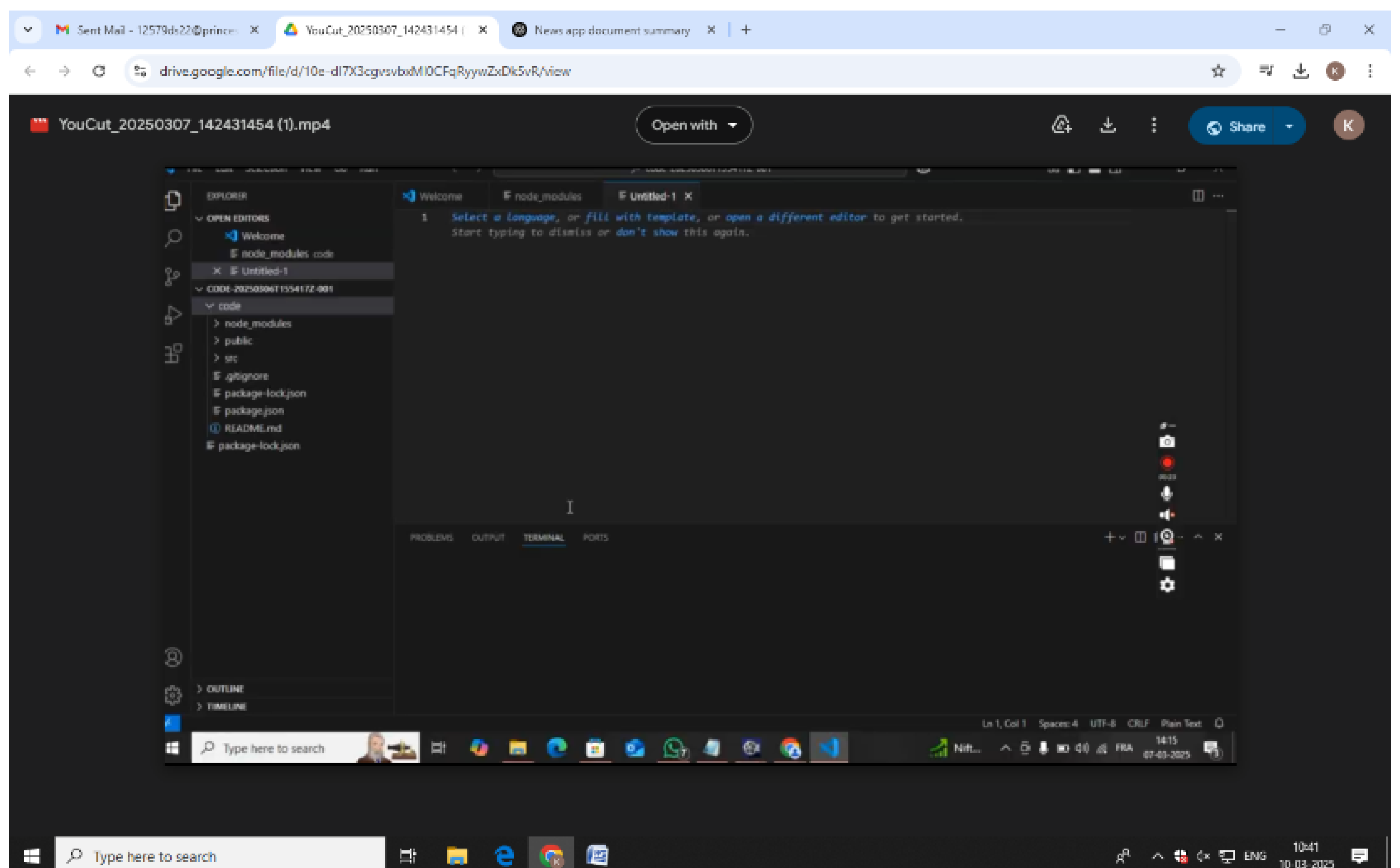
SCREEN SHOT:

STEP 1



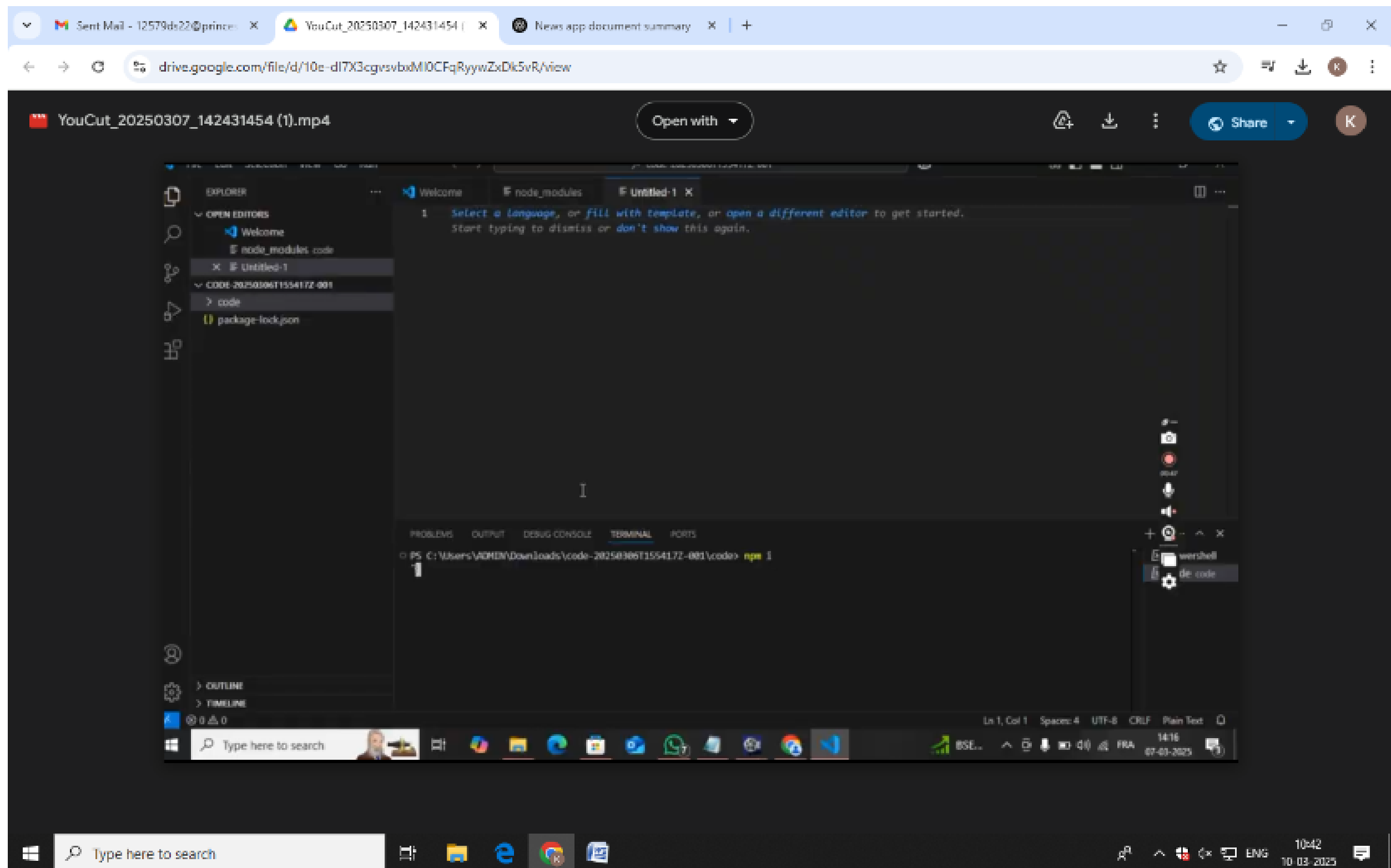


STEP 3:

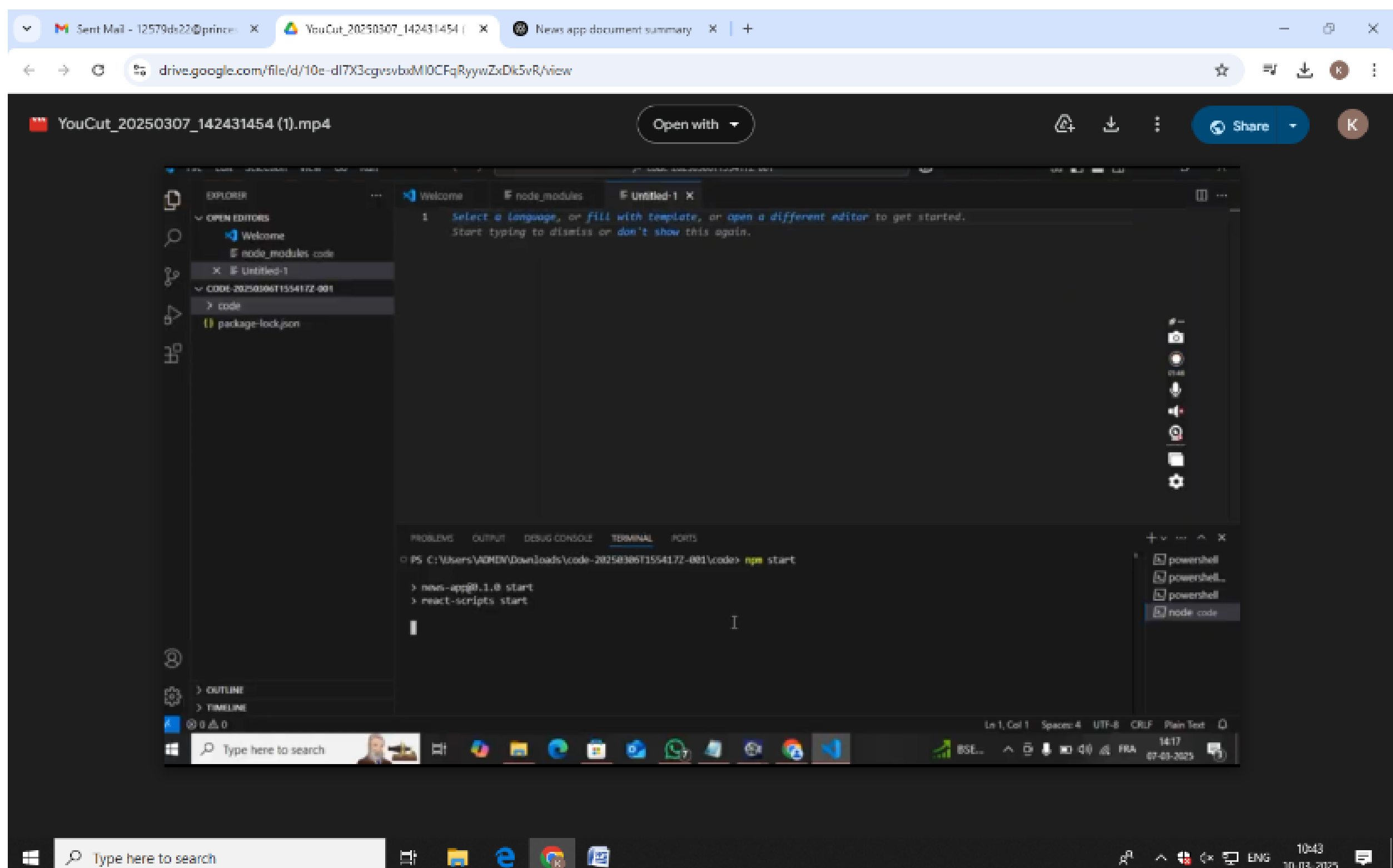




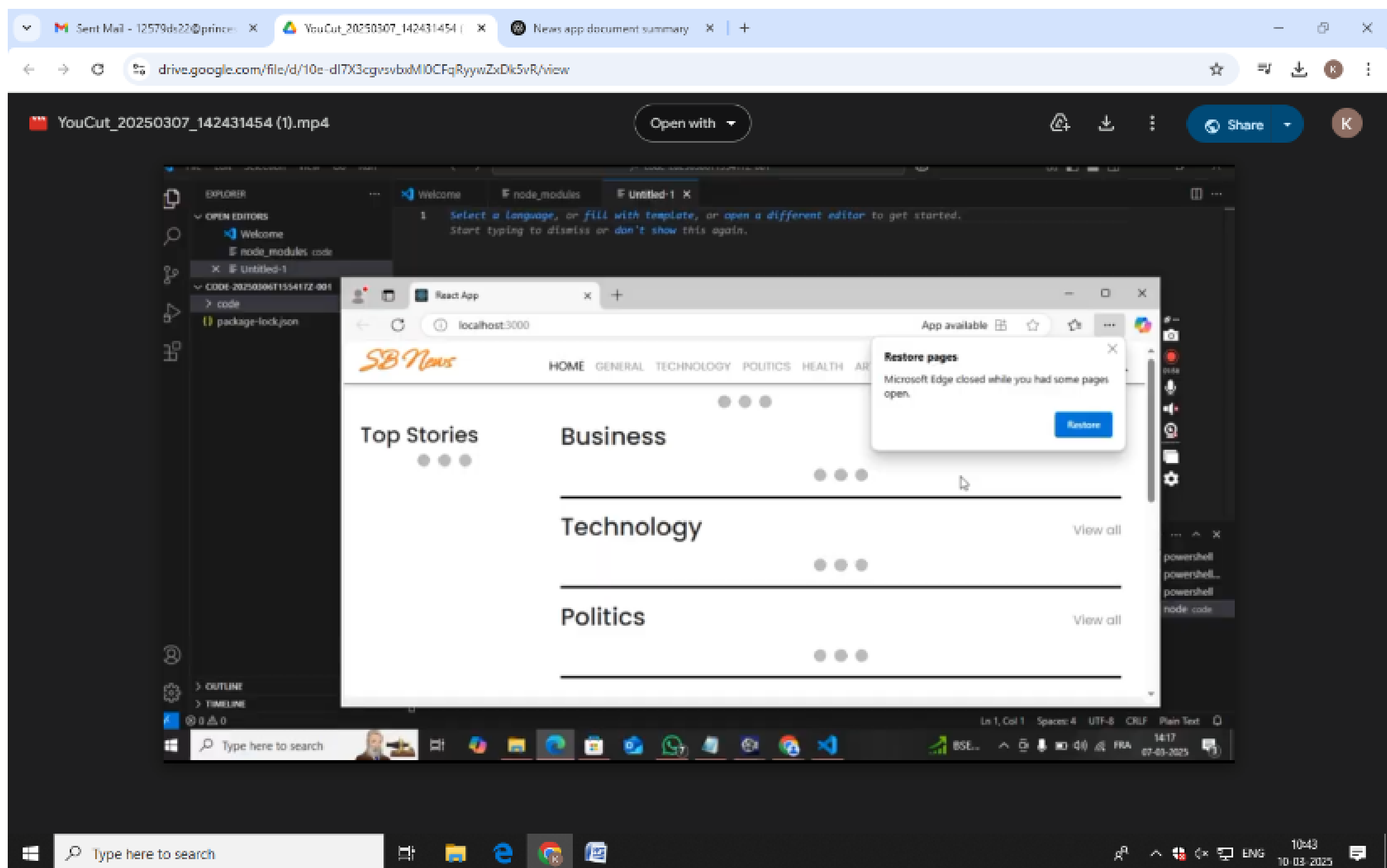
### STEP 3:



### STEP 4:



## STEP 5:



## Conclusion

InsightStream is a next-generation news platform that provides a seamless, user-friendly, and dynamic news consumption experience. With ongoing enhancements, it aims to be the go-to application for staying informed in real-time.